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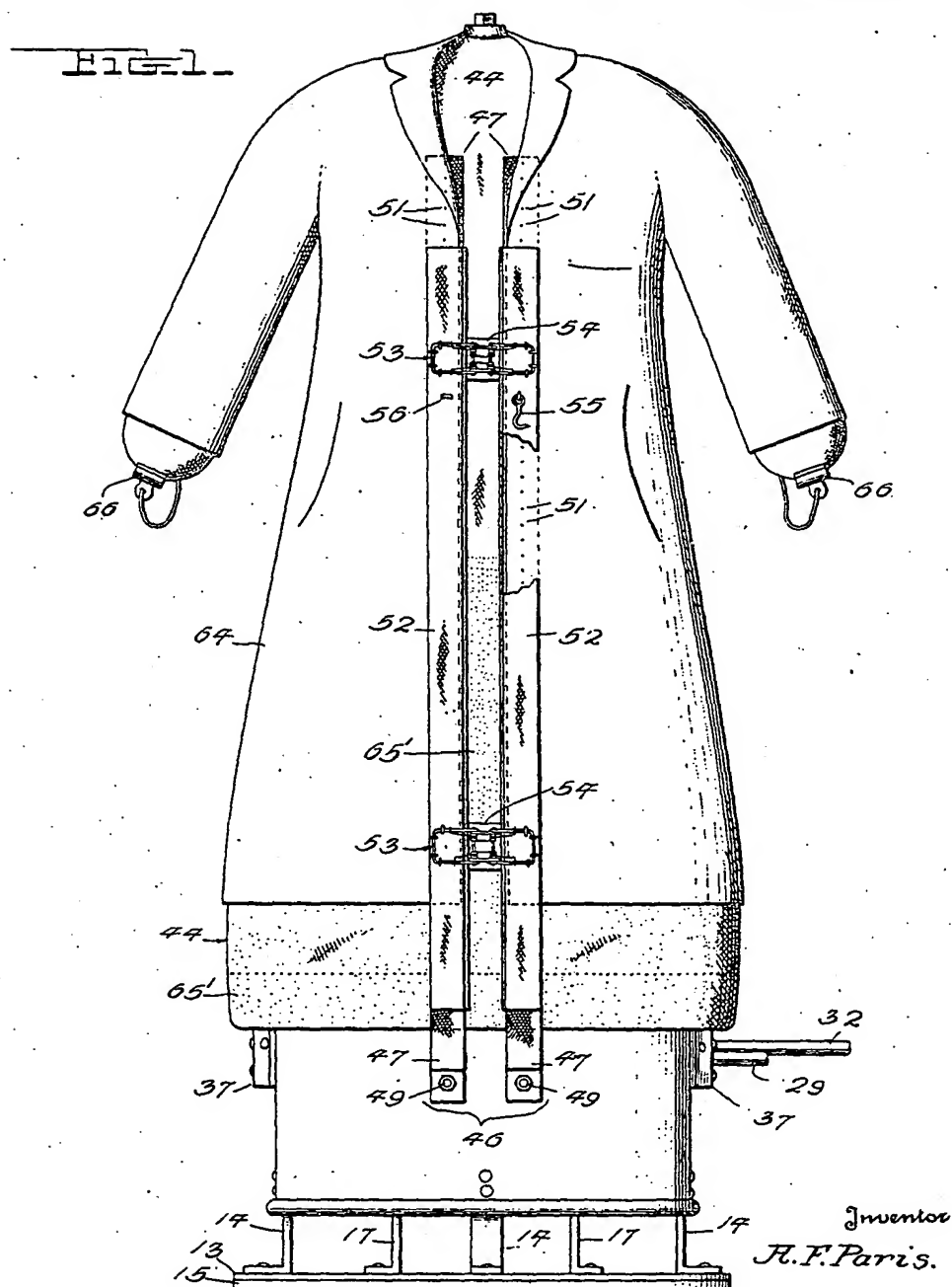
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GARMENT FINISHING APPARATUS

Filed Feb. 12, 1945

5 Sheets-Sheet 1



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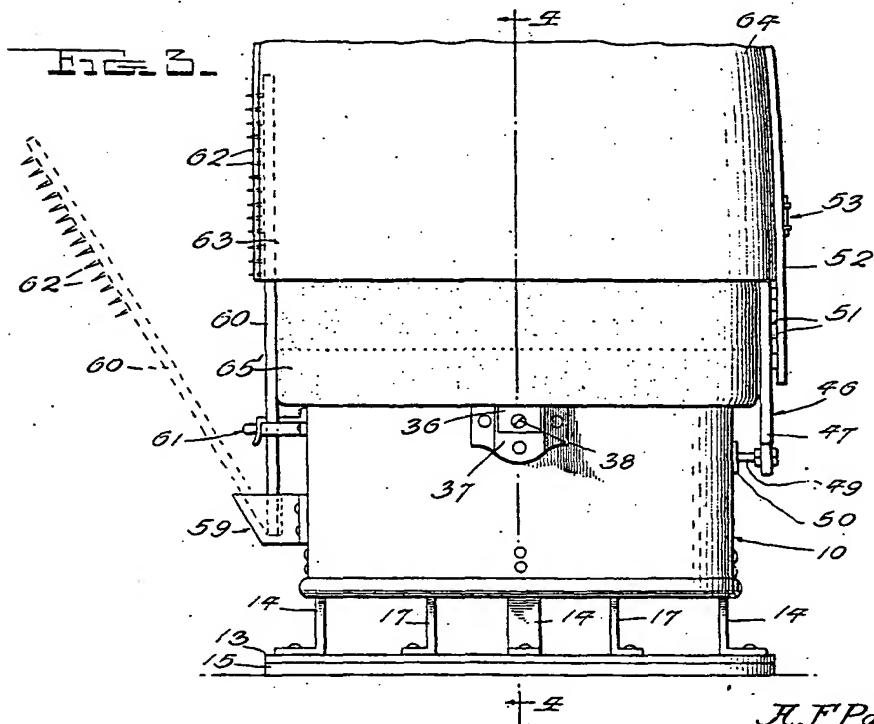
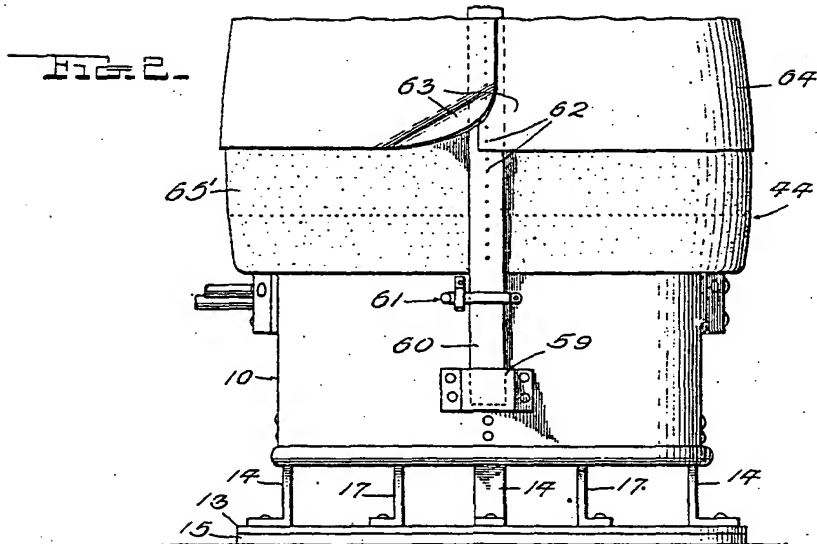
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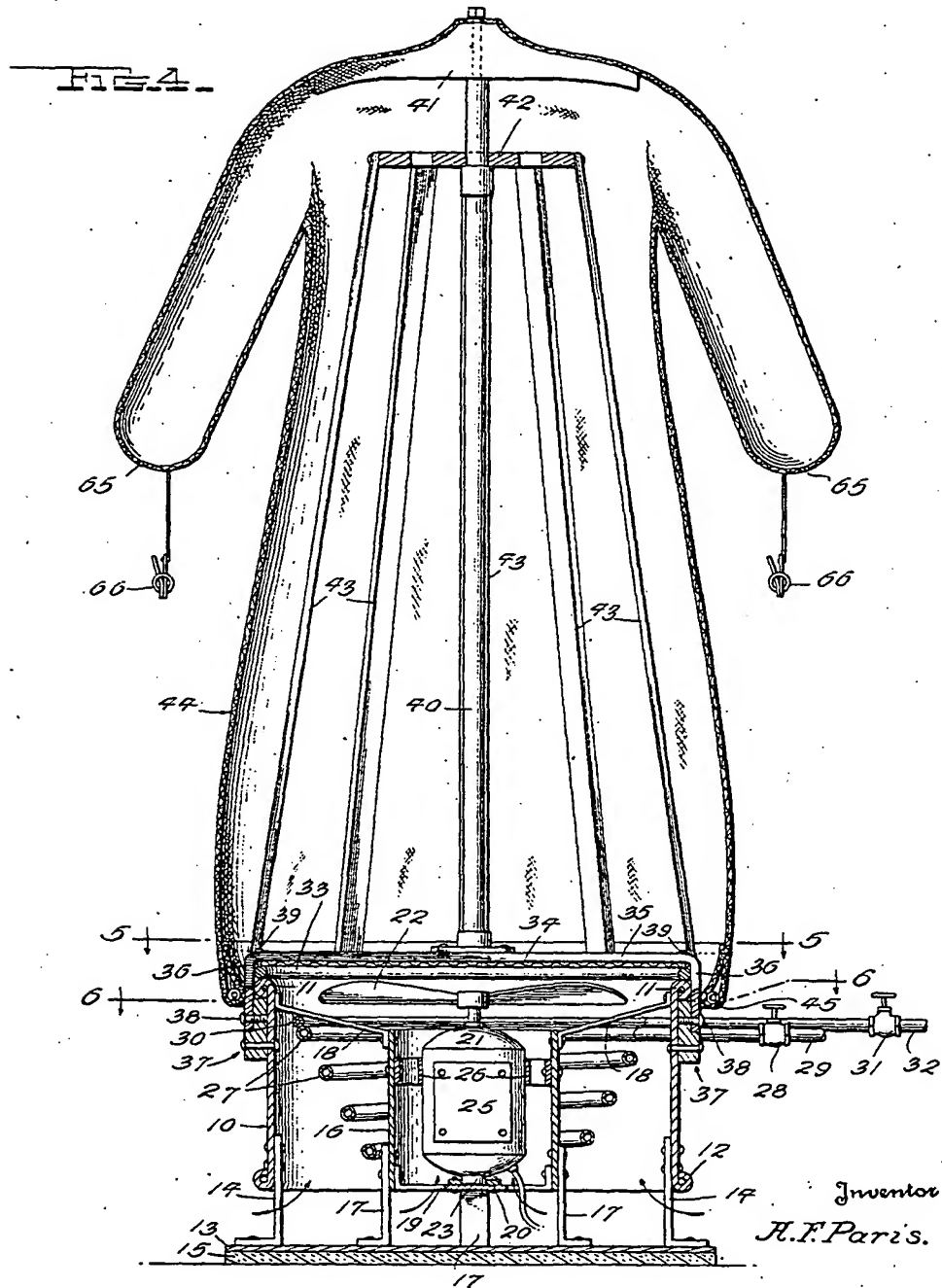
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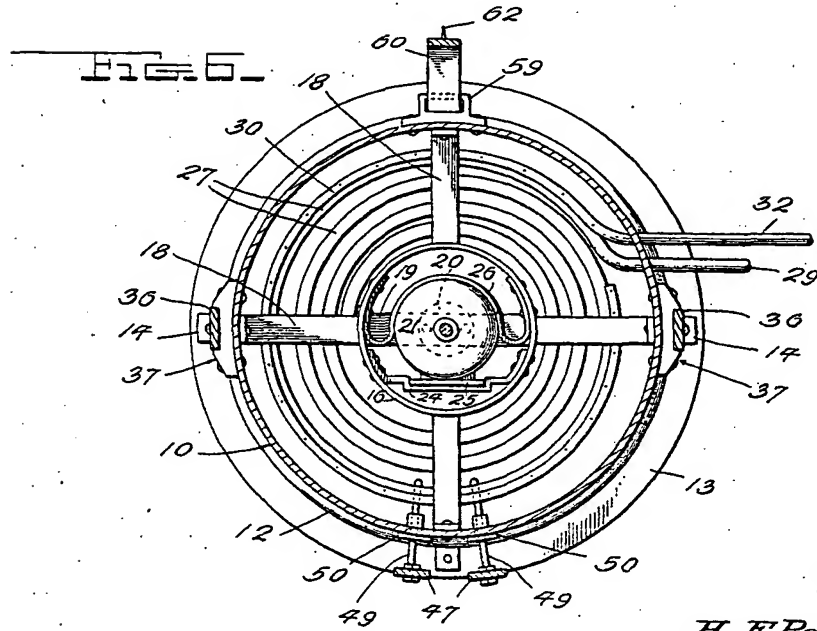
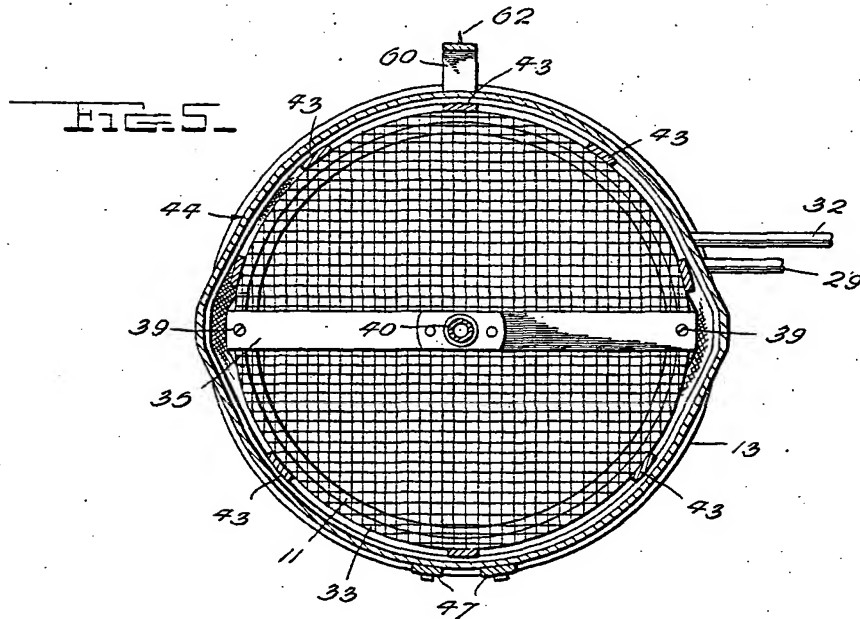
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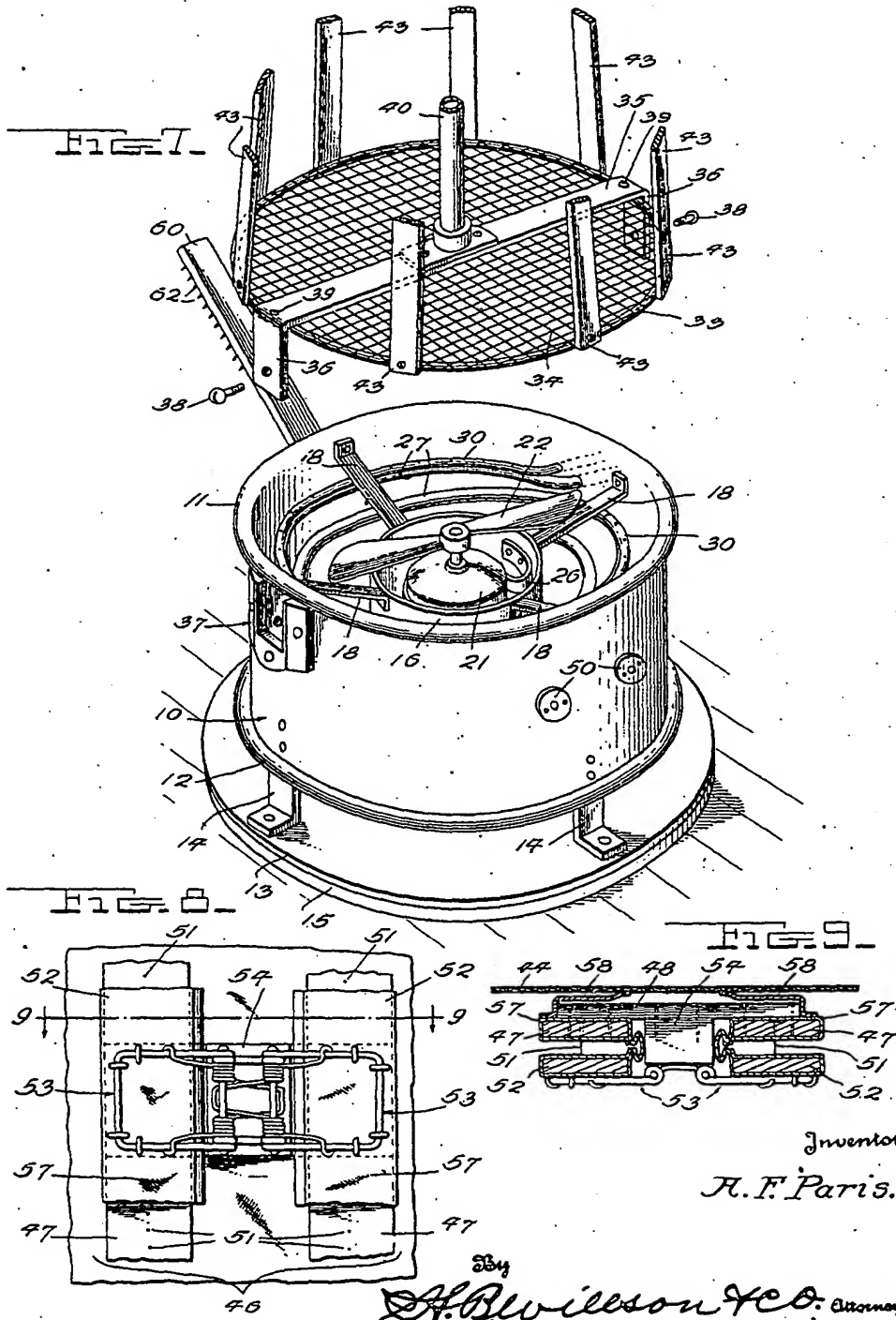
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UNITED STATES PATENT OFFICE

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GARMENT FINISHING APPARATUS

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15 Claims. (Cl. 223-70)

1

The invention aims to provide a new and improved apparatus for either finishing newly manufactured garments, or garments which have been wet-cleaned, dry-cleaned, or dyed.

The apparatus in its preferred form includes an inflatable porous form upon which a garment is placed, means for supplying steam to the interior of said form to initially inflate it and to steam the garment, a motor-driven fan for blowing air into said form after steaming to keep said form inflated and to discharge through the garment pores for drying purposes, and means for heating the air blown into said form; and further objects are to provide a single, complete, though relatively inexpensive, unit which may be readily placed in any establishment and will occupy little space; to construct said unit in a novel way from upper and lower sections secured together for quick detachment, the lower section including the steaming means, the heating means and the motor-driven fan, and the upper section including a supporting structure surrounded by the inflatable form and serving to suspend it in partly distended condition; to provide for quick and easy removal of the fan and its motor after removing the aforesaid upper section of the unit, thereby facilitating motor repair or replacement without loss of time; to provide a novel construction which will prevent steam from condensing in the steam discharge means and will thus prevent water of condensation from reaching the garment with the steam with possibility of staining; to make novel and advantageous provision for holding a garment upon the form in a manner which will not necessitate later pressing of the garment portions engaged by the holding means; to provide the inflatable form with a gummer portion to prevent upward slipping of a garment upon said form; and to provide an efficient and durable apparatus which may be easily, rapidly and profitably operated.

Figure 1 of the accompanying drawings is a front elevation partly broken away and in section, showing the garment form inflated and an overcoat held upon said inflated form, for finishing.

Figs. 2 and 3 are respectively a rear elevation and a side elevation of the lower portion of the apparatus showing more particularly the coat-tail holding means.

Fig. 4 is a vertical sectional view through the complete apparatus substantially on the plane of line 4-4 of Fig. 3.

Figs. 5 and 6 are horizontal sectional views on the correspondingly numbered lines of Fig. 4.

2

Fig. 7 is a fragmentary disassembled perspective view showing the lower section of the apparatus and a lower portion of the upper section, in juxtaposition.

Fig. 8 is an enlarged front elevation showing a portion of the garment-anchoring means.

Fig. 9 is a horizontal sectional view on line 9-9 of Fig. 8.

Preferred features of construction have been illustrated in the drawings and will be specifically described, with the understanding, however, that within the scope of the invention as claimed, numerous variations may be made.

A casing 10 is provided, said casing having a cylindrical side wall formed with an external bead 11 at its upper end, said wall also preferably having a bead 12 at its lower end. The lower end of the casing 10 is open to receive air and the upper end of said casing is open to discharge air, said open lower end being supported in spaced relation with a base plate 13, by means of appropriate legs 14. The base plate 13 is preferably lined on its lower side by thermal insulation 15.

Within the central portion of the casing 10, is a relatively small sleeve 16 which is supported by legs 17 secured to the base plate 13, the upper end of said sleeve being connected with the casing side wall by appropriate braces 18. A diametrical bar 19 spans and is secured to the lower end of the sleeve 16, said bar being provided with a suitable upwardly opening socket 20 at its center. Within the sleeve 16 is a vertical-axis motor 21 carrying a fan 22, the lower shaft bearing of said motor, denoted at 23 in Fig. 4, being seated in the socket 20. Secured in the sleeve 16 is a transverse bar 24 shaped as shown in Fig. 6 to form abutments engaging the motor base 25 to hold the motor 21 against rotation. Also secured in the sleeve 16, is a curved bar 26 to contact with the side of the motor opposite the bar 24 and thus hold the motor between the two bars in such a manner that said motor may be quickly and easily withdrawn upwardly from the casing 10, should repairs or motor replacement be necessary. Both bars 24 and 26 are preferably formed from spring metal to frictionally grip the motor and hold it snugly in place.

Within the casing 10, between the side wall of this casing and the sleeve 16, is a heating coil 27 for the air passing upwardly through said casing. Steam is preferably supplied to the coil 27, and a control valve 28 is shown in a steam supply pipe 29 for said coil, but obviously hot water could be used instead of steam if desired. A jet

3

pipe 30 is provided to supply steam for the purpose of steaming a garment to be finished, said jet pipe 30 being welded upon the uppermost convolution of the heating coil 27 and being provided with a valve 31 which connects it with a steam supply pipe 32. By placing the jet pipe 30 in this intimate relation with the coil 27, this coil 27 will keep said jet pipe hot and will thus prevent any steam from condensing in it. Consequently there is no danger of water of condensation being carried to the garment with the steam, with danger of staining said garment.

A ring 33 normally rests upon the bead 11 of the casing side wall and preferably carries a screen 34. This ring is diametrically spanned by a bar 35, the ends of which are bent downwardly to provide arms 36. These arms are snugly received in suitable socket members 37 secured to the side wall of the casing 10, the arms being preferably secured in the sockets by screws 38. Other screws or the like 39 secure the diametrical bar 35 to the ring 33.

At its center, the bar 35 rigidly carries a standard 40, the upper end of which supports a form-supporting member 41 resembling an ordinary coat hanger, the member 41, however, being preferably fabric-covered. The upper end portion of the standard 40 also supports a disk 42 spaced below the member 41. Substantially vertical slats or other side members 43 are secured at their upper ends to the disk 42 and at their lower ends to the ring 33, completing the formation of a skeleton frame for disposition within the inflatable garment form 44 so as to effectively suspend this form and prevent it from fully collapsing when not inflated. The lower end of the form 44 snugly surrounds the upper portion of the cylindrical side wall of the casing 10 and is removably engaged with said wall, being preferably provided with a hem-contained contractible ring 45 for holding it tightly around the casing side wall directly under the bead 11 and against the outer sides of the socket members 37 and the arms 36. The ring 45 may well comprise two small coil springs connected at their ends by cords, flexible wires or the like.

Suitably attached to the front portion of the inflatable form 44, is a vertically elongated garment-anchoring member 46 which preferably comprises two spaced vertical slats 47 connected by and rigidly secured to tie strips 48, as seen more particularly in Fig. 9. The slats 47 extend from points near the upper end of the inflatable form 44, to points below said form 44, and their lower ends are provided with rigid horizontal pins 49 passing slidably through suitable guides 50 secured to the side wall of the casing 10. As the form 44 moves outwardly or inwardly according to requirements, the pins 49 simply slide in the guides 50 and said pins will always support the weight of the member 46 so that the form 44 is relieved of performing this function and moreover, said form is supported at its front portion by said member 46. The slats 47 carry outwardly projecting pins 51 upon which to anchor both vertical edges of a coat, bath robe or the like, as will be clear from Fig. 1.

Outer slats 52 are hingedly associated with the inner slats 47 to close toward the latter, thereby clamping the edges of the garment between the two sets of slats and assuring that said edges shall be perfectly pressed during the garment-finishing operation, without requiring a special lay of the garment on a press, for pressing of said edges. In the present disclosure, appropriate spring

4

hinge devices 53 are connected with the outer slats 52 and are mounted upon the blocks 54 secured to the tie strips 48 connecting the inner slats 47, said spring hinge devices 53 serving to hold the clamps tightly closed against the garment. It is preferable that the outer or clamping strips 52 terminate below the upper extremities of the inner strips or slats 47, exposing a number of the pins 51 to permit better shaping of the lapels or other similar portions of the garment, as seen in Fig. 1. As also seen in this view, a hook 55 and eye 56 may be provided to hold the two clamping members 52 in open position while engaging the edges of the garment with the pins 51.

Preferably the inner and outer slats 47 and 52 are covered with fabric or the like as indicated at 57 in Figs. 8 and 9, and to these fabric coverings, flexible attaching strips 58 (Fig. 9) may be stitched, said strips 58 being also stitched to the inflatable form 44.

Secured to the rear portion of the casing 10 is an upwardly open socket 59 in which the lower end of a short vertical slat 60, is seated with sufficient looseness to permit said slat to swing from the full line position of Fig. 3 to the dotted line position of said figure, a suitable latch means 61 being provided to hold said slat 60 in vertical position when its use is desired. This slat is provided with outwardly projecting pins 62 upon which to impale the vertical inner edges of the tails of a coat. The coat tails are denoted at 63 in Figs. 2 and 3 and it may be considered that they are the tails of the coat illustrated at 64 in Fig. 1.

A garment to be finished is placed upon the form 44 while the latter is suspended from the hanger 41 and held against collapse by the side members 43. Then, with the heating coil 27 already hot and the jet pipe 30 heated by said coil 27, the valve 31 is opened and steam admitted. This steam enters the inflatable form 44 and inflates it, the steam of course escaping through the pores of the form and those of the garment to effectively steam the latter. By the time steam escapes through vent holes 65 in the ends of the form sleeves, the operator knows that all air has been driven from the form and that the garment is being effectively steamed throughout. The openings 65 may then be closed by suitable clamps 66 attached to the aforesaid sleeves, and the steaming operation may be carried on for one time or another depending upon the character of garment being finished. When sufficient steaming has been accomplished, the fan 22 is started and immediately afterward the steam valve 31 is closed. The fan 22 now blows air into the form 44 to keep it inflated, and obviously this air is effectively heated by the coil 27. The heated air discharges through the pores of the form 44 and the garment to quickly and effectively dry the latter while it is being held free from wrinkles by the inflated form. The air pressure created by the fan, while sufficient to remove all wrinkles from the garment, is insufficient to stretch the garment out of shape. When complete drying has been effected, the garment is removed and requires no further pressing.

Should motor trouble develop, removal of the two screws 38 will permit removal of the entire upper section of the apparatus from the casing 10, as will be clear from Fig. 7. Then, the motor 21 may be simply slid vertically from its holding means to facilitate repairs, or a replacement motor may be immediately reinserted so that the ap-

5

paratus will be out of use for only a few minutes.

I have found that the finishing of long coats and other garments is greatly facilitated, if say the lower half of the form 44 be gummed to prevent sliding of the garment thereon, particularly upward sliding. The gum has been indicated at 65' by stippling and while illustrated only on substantially the lower half of the skirt portion of the form, it could also well be on the lower ends of the sleeves and elsewhere if desired. In applying the gum, which I refer to as "gummerizing," I mix one quart of clear white rubber cement with two gallons of a suitable solvent heated at 85° to 95° F. Any solvent used by dry cleaners will suffice but I prefer that known as "Stoddard solvent." The lower part of the form is immersed in this mixture and swished around for a minute or so, removed and the solution somewhat squeezed out and then entirely extracted in a conventional dry cleaning extractor for about one minute. The form is then hung to dry in a drying room at a temperature of about 100° to 120° F. with the ventilator fan running for about ten minutes. Final drying is then completed at ordinary room temperature of 68° to 70° F. By this "gummerizing" procedure, sufficient gum will exist to prevent slipping of a garment upon the inflated form, yet the pores of the form will not be closed against escape of steam and air.

From the foregoing, taken in connection with the accompanying drawings, it will be seen that novel and advantageous provision has been made for carrying out the objects of the invention. While preferences have been disclosed, attention is again invited to the possibility of making numerous variations within the scope of the invention as claimed.

I claim:

1. In a garment finishing apparatus, an air-receiving and discharging casing having an upright cylindrical side wall with an open top, a ring resting on the upper edge of said side wall and carrying a diametrical bar, an upright support rising from said bar, an inflatable garment form surrounding and suspended from said support and having an open lower end disposed snugly beneath said ring and removably engaged with said side wall, a vertical axis electric motor arranged concentrically within said side wall and having the upper end of its shaft terminating close to the open top of said side wall, means for supporting said motor including readily releasable means permitting upward withdrawal, and a fan secured to the projecting end of said shaft and having blades rotatable immediately below the open top of said side wall and over the major portion of the area surrounded by said side wall, said ring and the support which it carries being readily detachable as a unit from the upper end of said side wall, whereby upon removal of said garment form and said ring carried support, the motor and fan may be immediately withdrawn through the top of said side wall without the disconnection or removal of other parts.

2. In a garment finishing apparatus, an air-receiving and discharging casing having an upright cylindrical side wall with an open top, a cylindrical sleeve open at its top and bottom and supported concentrically in said side wall with its top below and adjacent to the top of said side wall, an air heating coil supported in the annular space between said sleeve and side wall, a ring resting on the upper edge of said side wall and carrying a diametrical bar, an upright support rising from said bar, an inflatable garment

6

form surrounding and suspended from said support and having an open lower end disposed snugly around the upper end of said side wall beneath said ring and removably engaged with said side wall, a vertical axis electric motor having its body positioned within said sleeve and having the upper end of its shaft projecting above said sleeve but terminating below the top of said side wall, means for supporting said motor in said sleeve including readily releasable means permitting upward withdrawal, and a fan secured to the projecting end of said shaft with its blades disposed below the open top of said side wall and extending over the top of said heating coil, said ring and the support which it carries being readily detachable as a unit from the upper edge of said side wall, whereby upon removal of said garment form and said ring-carried support, the motor and fan may be immediately withdrawn through the top of said side wall without the disconnection or removal of other parts.

3. In a garment finishing apparatus, an air-receiving and discharging casing having a cylindrical side wall, a ring resting upon the upper edge of said side wall, a form support including spaced vertical members secured at their lower ends to said ring, an inflatable garment form surrounding and suspended from said support, the lower end of said garment form being disposed snugly around and removably engaged with said side wall, and means detachably securing said ring to said side wall.

4. In a garment finishing apparatus, an air-receiving and discharging casing having a cylindrical side wall, a ring resting upon the upper edge of said side wall, a diametrical bar secured to said ring, said bar having downwardly projecting arms at its ends disposed at the exterior of said side wall, means detachably securing said arms to said side wall, a form support including a standard secured to and projecting upwardly from said bar, and an inflatable garment form surrounding and suspended from said support, the lower end of said garment form being disposed snugly around and removably engaged with said side wall.

5. In a garment finishing apparatus, an air-receiving and discharging casing having a cylindrical side wall, a ring resting upon the upper edge of said side wall, a diametrical bar secured to said ring, said bar having downwardly projecting arms at its ends disposed at the exterior of said side wall, means detachably securing said arms to said side wall, a form support including a standard secured to and projecting upwardly from said bar, and spaced vertical members secured at their lower ends to said ring, and an inflatable garment form surrounding and suspended from said support, the lower end of said garment form being disposed snugly around and removably engaged with said side wall.

6. In a garment finishing apparatus, an air-receiving and discharging casing having a cylindrical side wall, a ring resting upon the upper edge of said side wall, arms carried by said ring and projecting downwardly therefrom at the opposite sides of said side wall, said side wall having sockets receiving said arms and permitting upward withdrawal thereof, a form support secured to and projecting upwardly from said ring, and an inflatable garment form surrounding and suspended from said support, the lower end of said garment form being disposed snugly around and removably engaged with said side wall.

7. In a garment finishing apparatus, a hori-

7

zontal ring, a diametrical bar secured to said ring, a central standard secured to and projecting upwardly from said bar, a form-supporting member on the upper end of said standard and resembling a coat hanger, a horizontal disk mounted on said standard below said form-supporting member, spaced vertical side members secured at their upper ends to said disk and at their lower ends to said ring, and an inflatable garment form hung upon said form-supporting member and surrounding said spaced side members, the lower end of said garment form being open for connection with air supply means.

8. In a garment finishing apparatus, a casing for upwardly discharging air, an inflatable garment form having its lower end connected with said casing to receive air therefrom, means for anchoring a vertical edge of a garment to said form including inner and outer vertical slats to receive the edge of a garment between them, the inner slat projecting below said form at the exterior of said casing, horizontally slidable means between said projecting end of the inner slat and said casing, attaching means for securing the upper portion of the inner slat to said garment form to make it a part thereof, and means for clamping the outer slat upon the inner slat with a vertical edge of a garment upon said form between them.

9. In a garment finishing apparatus, a casing for upwardly discharging air, an inflatable garment form having its lower end connected with said casing to receive air therefrom, means for anchoring the front edges of a garment to said form including an inner pair of connected, laterally-spaced, vertical slats attached to said form to make them a part thereof, the lower ends of said slats projecting below said form at the exterior of said casing, horizontally slidable means between said projecting ends of the slats and said casing, a pair of outer slats superimposed on said inner slats and extending throughout the major portion of the height of said form, means for mounting said outer slats for movement toward and from said inner slats to permit the front edges of a garment on said form to be received between them, and means for forcing said inner and outer slats together to anchor the edges of the garment between them.

10. In a garment finishing apparatus, a casing for upwardly discharging air, an inflatable garment form having its lower end connected with said casing to receive air therefrom, means for anchoring the front edges of a garment to said form including an inner pair of connected, laterally-spaced, vertical slats, flexible strips attaching said slats to said form, the lower ends of said slats projecting below said form on the exterior of said casing, horizontally slidable means between said projecting ends of the slats and said casing, spaced pins on the outer faces of said slats, a pair of outer slats superimposed on said inner slats and extending throughout the major portion of the height of said form, and spring hinges mounting said outer slats for movement toward and from said inner slats, whereby the front edges of a garment on said form when impaled on said pins will be clamped thereon by said outer slats.

11. In a garment finishing apparatus, a casing for upwardly discharging air, an inflatable garment form having its lower end connected with said casing to receive air therefrom, a vertical garment-anchoring member disposed at the ex-

8

terior of said garment form, the lower end of said garment-anchoring member projecting below said garment form at the exterior of said casing, attaching means for securing said garment-anchoring member to said garment form to make it a part thereof, horizontally slidable means connecting said lower end of said garment-anchoring member with said casing, and means for connecting both front edges of a garment in spaced relation to each other, with said garment-anchoring member when the garment is placed on said form.

12. In a garment finishing apparatus, a casing for upwardly discharging air, an inflatable garment form having its lower end connected with said casing to receive air therefrom, said casing being cylindrical and provided with laterally spaced guide openings, means for anchoring the front vertical edges of a garment to said form including a pair of connected laterally-spaced, vertically extending slats disposed at the exterior of said form and having their lower ends projecting below said form at the exterior of said casing, inwardly extending pins on said projecting ends of the slats slidably and removably mounted in said guide openings, means for attaching the upper portions of said slats to the form, and means associated with said slats for clamping upon them the front vertical edges of a garment placed on said form.

13. In a garment finishing apparatus, a casing for upwardly discharging air, an inflatable garment form having its lower end connected with said casing to receive air therefrom, a garment-anchoring member projecting upwardly from the rear portion of said casing at the exterior of said garment form, a bracket on the rear of the casing having an upwardly open V-shaped socket receiving the lower end of said member with sufficient looseness to permit rearward swinging of said member when not needed, a latch on said casing above said bracket to hold said member in its vertical position, and outwardly projecting pins on the rear face of the upper portion of said member on which the vertical inner edges of coat tails may be anchored to said member when a coat is placed on said form.

14. In a garment finishing apparatus, an inflatable garment form, and vertically elongated garment-anchoring means attached to and forming a part of said inflatable form for anchoring a vertical edge of a garment placed on said form, said garment-anchoring means including a pair of superimposed slats to receive the edge of the garment between them, a flexible fabric strip extending lengthwise of one of said slats and having one longitudinal edge attached to said slat and its opposite edge attached to said form, and means for clamping the slats upon the garment edge.

15. In a garment finishing apparatus, an inflatable garment form, and vertically elongated garment-anchoring means attached to and forming a part of said inflatable form for anchoring the vertical edges of a garment placed on said form, said garment-anchoring means including an inner clamping member having flat outer faces along its side edges provided with pins on which the vertical edges of a garment on the form may be anchored, a pair of outer members having flat faces to be superimposed on said flat faces of the inner member with the garment edges between them, and spring hinges mounting said outer members on the inner member to cause the

2,417,838

9

garment edges to be clamped and pressed between
said flat faces.

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10

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Applic. # _____

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